

Conclusions



Strategic and Operational Planning

At the strategic level, Soviet sources do not indicate that the Petsamo-Kirkenes Operation was timed to coincide with any other offensive being conducted on the Soviet-German front. The rationale for the timing of this offensive seems to be related primarily to events occurring in this somewhat isolated theater of war, beginning with the spring 1944 Soviet decision to attack the Finnish Army. Having thus committed the bulk of the maneuver units of the Karelian Front to the offensive in southern Karelia in June, General Meretskov could not have hoped to begin a large-scale offensive anywhere else in his Front until troops became available again. For this reason, given the time required to reposition forces from southern Karelia to the Murmansk area, the Petsamo-Kirkenes Operation could not have begun much earlier than 7 October.

General Meretskov could have waited until winter when the ground would be frozen and perhaps more suitable for cross-country maneuver. However, given the presence of so many water obstacles and the nature of the soil and topography, it is questionable whether winter weather would have made the terrain any more trafficable. Also, with harsh winter weather came other problems, namely, the survivability of the force in subzero temperatures and the continuous limited visibility due to the polar night.

Whether STAVKA or General Meretskov considered these problems is not known, but it is certain they looked at the political and military situation. Although Meretskov did not know the intentions of the German command after Finland's exit from the war, he believed that, sooner or later, Germany would have to withdraw its forces from northern Finland. It was his desire that these forces not depart "unpunished," and so, he wanted to attack them as soon as possible.¹ STAVKA, on the other hand, perhaps not aware of German plans to withdraw into Norway under Operation Nordlicht, was convinced that the Germans intended to remain in the Petsamo area and, therefore, could reinforce XIX Mountain Corps for another push toward Murmansk.² In addition, the Soviet government had the desire, though unstated, to occupy that portion of Finnish territory adjacent to Norway, which the Germans had used in 1941 as a springboard

into Soviet territory. This strip included the port of Petsamo, as well as the strategically important nickel mine to the southwest.

In all the strategic considerations, it does not appear that the Soviet government gave any serious forethought to the occupation of Norwegian territory. The Soviets' subsequent occupation seems to have been undertaken primarily for the military objectives. The designation of the Arctic Ocean Highway and Nikel Road area as the main axis in phase two and that Soviet forces left Norway in October 1945 of their own volition, leaving the border as it had been for the past 140 years, support this conclusion.

N. M. Rumiantsev, the author of an in-depth study of the Petsamo-Kirkenes Operation, labeled it as "a Frontal operation of strategic significance," citing the isolation of the arctic axis, as well as the combined employment of air, ground, and fleet forces.³ In a 1963 review of Rumiantsev's book, Marshal Meretskov agreed with this assessment.⁴ That Soviet military historians still consider this to have been an operation of strategic significance was made manifestly clear in 1986–87 when *Voennno-istoricheskii Zhurnal* (Military History Journal), the Soviet Ministry of Defense's official historical publication, published a series of articles defining "strategic" operations of the Great Patriotic War.⁵ Though challenged by readers, the editors of the journal affirmed this operation as strategic, stating that "important military-political and strategic goals were accomplished as a result of its conduct." The editors also emphasized the importance of the use of naval forces.⁶

This labeling of the operation as strategic is more than a petty argument among historians. Given the current and future importance of both the military and economic infrastructures in the Murmansk area and the proximity of Norway, a NATO partner, any future military operations in the Murmansk area will be strategically important and will be planned and controlled at the Soviet government's highest level. Without question, naval as well as land forces will be involved.

STAVKA also influenced the planning for this offensive at the operational level. The principal weakness of the Soviet operational plan was the STAVKA-imposed delay of the initial amphibious landing and cross-isthmus attack of the Northern Fleet's ground forces. Meretskov originally had proposed that these naval infantry attacks be conducted simultaneously with his land offensive. As it turned out, the naval ground forces' entry into the battle came approximately thirty hours after German units on that flank were given permission to withdraw. This operational plan prevented Golovko's naval infantry from encircling the German left flank.

Also, the operational plan made no provision for pursuing the German forces into Norway, which was an entirely foreseeable event. It is to Meretskov's credit that he and his subordinate army and corps commanders were able to react quickly to the developing situation and divert three corps toward Kirkenes in the second and third phases of the operation. And while he made no plan to pursue German forces into Norway, Meretskov did not hesitate to allow his special-purpose units to use Norwegian territory for

their activities. This was consistent with the Soviet practice of sending naval ground reconnaissance groups into Norway as far back as 1941 to reconnoiter German installations and naval vessel movement.

Notwithstanding these faults, the operational plan was exceptional in concentrating overwhelming combat power on a narrow breakthrough sector.⁷ Lieutenant General Shcherbakov, the 14th Army commander, had two rifle corps, with a total of four divisions in their first echelons, attacking against a single German division. This German division was defending a zone fifteen kilometers wide with a single regiment forward of the Titovka River and the second regiment behind the river. In effect, each German battalion along the strongpoint line was defending against a Soviet force of greater than division strength. With this kind of superiority, it is no surprise that the Soviets achieved a breakthrough so quickly.

According to Rumiantsev, the plan's designation of a single breakthrough sector had several advantages. It facilitated joint operations with the Northern Fleet's ground forces, targeted the enemy's weakness, and provided the shortest path to the enemy's lines of communication. The allocation of a rifle corps with two divisions to the army second echelon allowed for the possibility of a major counterattack to the Soviet right flank by the 6th Mountain Division, as well as the retention of a relatively fresh force that could be committed after the breakthrough.⁸

At corps level, evidence suggests that corps commanders and staffs without experience in arctic combat initially developed unrealistic plans. For example, Lieutenant General Mikulskii's 99th Rifle Corps had arrived in the Murmansk area straight from combat in the forests of southern Karelia just days before the offensive began. By Mikulskii's own admission, he and his staff did not understand how the arctic terrain could affect operations. Consequently, they planned to employ tanks and artillery just as they would have on ordinary terrain.⁹ The lesson here is that commanders who are earmarked for arctic deployment should study arctic war experience or, even better, conduct terrain walks or staff rides on arctic terrain.

Soviet Command and Control

The Soviet command and control system was extremely complex. Meretskov, a former chief of staff of the Red Army, who had commanded an active Front throughout the entire war and whom Stalin personally regarded as a reliable and competent general, still had to have *STAVKA* approve his operational plan. Admiral Golovko operated in two chains of command. He received operational guidance and orders from *STAVKA* and also administrative support and orders from the Main Naval Staff in Moscow. General Sokolov, the 7th Air Army commander, also worked for two bosses. His operational orders came from his immediate superior, General Meretskov, and his administrative guidance and orders on training, personnel, maintenance, and other support issues came from the Main Air Staff in Moscow. To further complicate matters, at Front and below, there

were both common and special staffs whose tentacles reached down into subordinate staffs at each level, wielding considerable authority.

Since this complex system had been developed over time and had been tested and proven in battle, it functioned rationally. In fact, the command and control of large-scale offensives, much larger than the Petsamo-Kirkenes Operation, had reached a high level of proficiency by this stage in the war. Even the difficulties imposed by the arctic terrain and weather did not severely degrade the ground operational command and control of this battle. The glue that held the whole system together and made it effective was the personal trust of patrons (the Soviet commanders) and clients (their subordinate commanders and staff officers). This trust had developed over many years, with personal relationships often dating back to the Russian Civil War (1918–22). Meretskov, for example, surrounded himself with commanders and staff officers he had served with when he commanded the 7th Army during the war with Finland in 1939–40 and the Volkhov Front in 1942–44.

Meretskov, as an energetic Front commander, established his forward command post on 7 October only fifteen kilometers behind the lead elements of the attacking forces on the main axis. During the battle, he frequently visited corps or division command posts to check on the execution of his plans and orders. Consequently, this tendency to personally supervise subordinates traveled down the chain of command. Lieutenant General Shcherbakov, the 14th Army commander, moved his command post to the main axis and transmitted oral or written orders to his subordinates on the average of one every twenty-four to forty-eight hours. Corps command posts were located within the sound of the battle, generally six to twelve kilometers behind the battle area, and corps commanders gave daily oral orders to division commanders, either in person or over the telephone, followed later by written orders. Division observation posts were well forward, often with the lead rifle regiment. This close proximity of senior commanders to the battle enabled them to see the terrain on which their units were advancing, ascertain the physical status of their units, and judge the effectiveness of their plans and orders.

In sharp contrast, the command post of Lieutenant General Degen, commander of the 2d Mountain Division, was on the west side of the Titovka River, several kilometers behind his division's forward edge. General Jodl, the XIX Mountain Corps commander, ran the battle from his command post at Petsamo, some thirty kilometers distant from the most threatened sector. Colonel General Rendulic, the Twentieth Army commander, visited the battlefield only once, about a week into the offensive, and then only to meet with his corps and division commanders. The edge in generalship clearly belonged to the Soviets.

Even though the Soviet command and control system was complex, it repeatedly demonstrated adaptability and flexibility. For example, at Front level, the operational plan rapidly changed to accommodate pursuit of German forces into Norway. At army level, Shcherbakov, on 8 October, abandoned his plan to have engineers construct a road on the axis of each

rifle corps in the main attack and ordered that a single road be built to connect existing Soviet and German roads. Frequently, in reaction to either the enemy situation or to higher orders, commanders at corps level changed the task organizations of divisions and special units, such as engineer and armored forces. Examples include the 8 October exchange of rifle divisions between the 99th and 131st Rifle Corps, the breakup of Group Pigarevich on 15 October and resubordination of its combat elements to other corps, the redirection of armored units from a single axis to three axes after 15 October, and the substitution of a rifle regiment for the 126th Light Rifle Corps' mission on 23–24 October.

Not discussed in any Soviet source is the one major command change that occurred during the operation. On 23 October, as the 131st Rifle Corps approached Kirkenes from the Tarnet area, Major General Alekseev was replaced by one of his division commanders.¹⁰ His corps, which had performed well in the breakthrough, was on the army secondary axis. Its advance toward Kirkenes from the east was not unduly slow considering the stiff opposition and the difficult terrain. It is noteworthy that, even though the change occurred, the 131st, along with the 99th Rifle Corps, successfully pressed its attack and captured Kirkenes on 25 October.¹¹

Unreliable communications and inaccurate maps also created serious command and control problems that often contributed to disorder and uncoordinated actions at both the operational and tactical levels. Once the offensive was launched, wire communications were largely abandoned, and radios had to be used. Unfortunately, because of atmospheric interference, radios frequently did not work. According to Rumiantsev, radio messages were transmitted in uncoded text, using a map reference point system, instead of a preplanned complex system of codes. Because of the uncertainty of radio communications, army headquarters could not always communicate with one or both of the light rifle corps, and conventional rifle corps headquarters could not always communicate to subordinate divisions.¹² The lack of accurate maps frequently interfered with operations by not correctly reflecting the terrain. This prevented units from pinpointing their precise location in reports to higher headquarters and further led to difficulties in adjusting air and artillery fire support and in coordinating cross-country maneuvers and attacks by flanking detachments.

To mitigate these problems, the Soviet commanders attempted to place themselves as close to their subordinate commanders and units as possible. Other obvious remedies to these problems would have been to establish redundant communications systems and to ensure that map rooms were stocked with the most recent and accurate maps available.

Combat Forces

Given the tremendous hardships imposed on the Soviets by the terrain and weather, the performance of Soviet combat units was generally good. Regular infantry units were employed in frontal assaults up steep slopes defended by entrenched German mountain troops, while other Soviet regi-

ments attacked the same positions from the flank or rear. In this way, Soviet tactics mirrored the operational scheme of maneuver, wherein large formations conducted a frontal attack while light rifle corps and naval infantry units attacked from the flanks and rear. On the third day of the battle, as the forces on the main axis crossed the Titovka River, the infantrymen fought with less and less ammunition and fire support against German units whose lines were shortening. Soviet units frequently moved or attacked at night on terrain that was difficult to traverse even in daylight.

Of all the Soviet units, the light infantry had the most difficult task—to advance on axes without roads carrying all their food and ammunition as well as heavy weapons on pack animals. In all three phases of the operation, both light rifle corps were assigned similar missions—move around the flank of a German unit or position, block the main supply route, and hold it until the main force arrived. The 126th Light Rifle Corps successfully executed this mission from 7 to 12 October, blocking Arctic Ocean Highway behind the 2d Mountain Division west of Luostari. However, when the main force arrived in the area, the 126th Light Rifle Corps was split, and one brigade was sent northward to block Tarnet Road west of Petsamo.

The 127th Light Rifle Corps was less successful than the 126th during the first phase of the offensive. The 70th Naval Rifle Brigade, after an exhausting several-day trek over exceedingly difficult terrain, arrived in the objective area too weak to accomplish its mission. When the brigade finally approached Tarnet Road on 12 October, its troops had neither the physical strength nor the combat power to block the road. To survive, these men were forced to eat captured German supplies and their own animals.

Many questions about the 127th Light Rifle Corps remain unanswered. Where was the 69th Naval Rifle Brigade during 11–15 October? Was it available and employed against Tarnet Road, or did it remain in the Luostari area? Was an attempt made to resupply the 127th Light Rifle Corps by air, as was done with the 126th Light Rifle Corps? Was there any effort to employ close air support in conjunction with the ground attacks against Tarnet Road? Hopefully, these questions will be answered by the future publication of additional Soviet source materials. Even without these answers, it can be said with certainty that the failure of the two light infantry brigades to seal off Tarnet Road, when coupled with the planned delay of the amphibious landing and cross-isthmus attack by Northern Fleet forces, led to the failure of Soviet forces to encircle and destroy the XIX Mountain Corps, as was their goal.

In the second phase of the operation, an element of the 127th Light Rifle Corps, operating on the southern flank of the 31st Rifle Corps, reached the German main supply route southwest of Nikel. However, this element was destroyed because it had insufficient combat power to survive against a more mobile and powerful enemy. In the third phase of the operation, both light rifle corps were delayed due to logistic problems, and both were unable to coordinate their subsequent movement with the units they were to support in the main attacks.

Soviet light infantry units proved to be highly mobile, but the same mobility often took them out of the range of their supporting heavy artillery. It placed them in fighting positions where their lightness in combat power became a liability. The enemy was able to maneuver reserves quickly to counterattack or simply to apply greater force at the critical point.¹³ In all phases of the operation, the cumulative effects of physical exhaustion, brought on by continuous movement and combat, and the inability to provide logistic sustainment seriously degraded the combat effectiveness of both light rifle corps.

Soviet analysts today recognize that helicopters and all-terrain vehicles have changed the way light forces will move, fight, and resupply on arctic terrain.¹⁴ But even if the vehicles of war have changed since 1944, arctic weather and terrain have not. Proponents of light forces must always keep in mind these forces' inherent limitations, which over time considerably lowered their combat effectiveness in this operation.

Important to both the regular and light infantry was artillery support. According to the 29 September Front order, the artillery's first mission was to defeat the enemy's artillery, most of which was deployed on the reverse slopes of the 2d Mountain Division's strongpoints or in firing positions east of the Titovka River. The 2-hour and 35-minute artillery preparation was only partially effective in accomplishing this mission. Soviet sources attribute this failure to low weapons system density (only ninety-five guns and mortars per kilometer of breakthrough sector), poor reconnaissance of targets, and problems in observation and adjustment of fire caused by inclement weather. As a result, in some sectors, German artillery survived the Soviet artillery preparation, thus delaying the success of Soviet infantry attacks.¹⁵

Another artillery mission was to support the breakthrough and then the crossing of the Titovka River. Although Lieutenant General Mikulskii indicated an insufficiency of heavy artillery for this task, it was indeed accomplished from initial firing positions.¹⁶ Also, the mix of artillery calibers was a problem. Over half of the approximately 2,100 tubes supporting the operation were mortars, and only 20 percent of the total was in calibers of 122-mm and above. Mortars were good at reaching reverse slopes and for supporting cross-country flanking movements, but their bursting effect was reduced by the soil type. Their shells could not penetrate the rocky soil and exploded harmlessly in swampy soil. In addition, their range was limited.

The most difficult mission for Soviet artillery units, not only early in the offensive but also in its latter two phases, was to support the infantry's attack into the intermediate German positions. Contributing to this problem was a shortage of accurate maps of the area of operations.¹⁷ Also, due to unreliable communications, control and adjustment of fires was often poor. In many cases, because of a lack of trained observers in infantry units, area fire, rather than adjusted fire, was employed. To solve this problem, artillery commanders sent officers with their own radio sets out to supported units. In the closing phase of the operation, the Soviets also used small spotter planes to adjust fires.

However, the most serious obstacle to good artillery fire support to the infantry was mobility, both for the weapons systems and for the resupply of ammunition. Soviet artillery units did not displace from their initial firing positions until late on the third day of the offensive and, after crossing the Titovka River, were still unable to disperse across the width of the attack zone, all on account of the restricting terrain and the limited road network. Although terrain management (that is, the efficient use of ground suitable for multiple uses) became less of a problem after the capture of Petsamo, it remained extremely difficult to move gun units and ammunition because the retreating Germans had destroyed the roads.

Given the Soviets' experience in operating on this same terrain during the Soviet-Finnish War of 1939—40, it is difficult to understand why they did not foresee these terrain-related problems and plan for them. Equally difficult to rationalize is the Soviet predisposition for high tube densities. They attempted to compensate for lack of accuracy with mass, quantity replacing quality. Instead, the Soviets should have used fewer artillery pieces and organized, controlled, and supplied them more efficiently. In essence, in designing artillery packages to support combat on arctic terrain, artillery planners should seek to achieve some optimum balance between mobility of weapons systems, range, maximum target effect, and ammunition support.

The Soviet employment of armored vehicles in this operation did not have a great impact on the final outcome of the offensive, even though the Germans had no armored force. Tanks and self-propelled guns did not enter combat until 11 October, which was four days after the infantry had crossed the Titovka River. During the second and third phases of the offensive, armored units were employed on three separate road axes. But restricting terrain and the roads' poor condition limited armored units to an infantry support role in which they could advance on a frontage of only one or two vehicles.

Armored units suffered high combat and mobility losses, a reflection both of the German antitank defenses and the terrain. Due to the hardness of both the soil and the German positions, these units expended a higher than normal rate of main gun ammunition. Thanks to overwhelming Soviet air superiority, Soviet armored units were not particularly vulnerable to air attack as normally would be the case on arctic terrain. Despite these problems, current Soviet doctrine and force structure continue to reflect the employment of tanks in arctic regions. Although tanks can be employed in the Arctic, their value as a combat multiplier can be nullified by an opposing force physically and psychologically trained and equipped to fight against tanks.

Combat Support Operations

Lieutenant General Khrenov, commander of engineer troops in the Karelian Front, best expressed the Soviet attitude toward engineer support of offensive combat in special terrain conditions: "Absolutely untrafficable terrain does not exist. The degree of trafficability depends on the quality of

engineer support.”¹⁸ Despite this attitude, however, and an enormous effort on the part of Soviet engineers, Lieutenant General Mikulskii, the 99th Rifle Corps commander, stated that “engineer support was the weakest aspect in the planning and preparation of the corps offensive.”¹⁹ This criticism can fairly be extended to the operation as a whole.

Much of the engineer work of developing the road network and preparing assembly areas in the area of operations was to have been accomplished during the summer of 1944. While the bulk of this work was indeed completed, Mikulskii recalls that, on 6 October, his men had to construct their own primitive shelters in their divisional and regimental assembly areas.²⁰

In addition to constructing roads and assembly areas, engineer troops were to assist the infantry forces in the initial assault on German defensive positions. During the preparatory period, engineer units aided in the reconnaissance of the terrain by helping to determine the nature and strength of the fortifications, suitable terrain for the future construction of roads and paths, and possible crossing sites on the Titovka River. Again, according to Mikulskii, at least in his corps sector, these tasks were not performed well.

Reconnaissance and study of the enemy defenses and terrain . . . turned out to be inadequate. Data on the enemy, and especially about the character of his defensive works and their disposition on the terrain, was incomplete and inaccurate, as was made clear in the course of the battle.²¹

On the main axis, engineer troops were also to support the rapid forcing of water obstacles. Equipped with both light and heavy bridge sets and two battalions of amphibious vehicles, the Soviet engineers were generally able to construct or organize a crossing at any major obstacle, first for dismounted troops and then for vehicles. As the operation progressed, however, and the bridging equipment was consumed, Soviet engineers had to rely more on the use of amphibious vehicles and bridges made of wood. Timber, especially in the thicknesses required to construct heavy bridging, was in short supply. Some delays occurred at bridging sites, especially late in the operation, which slowed the tempo of the advance.

By far the most difficult task for engineer troops was the construction, repair, and maintenance of the roadnet. The 14th Army commander quickly abandoned his overly ambitious road construction plan and, instead, concentrated all engineer efforts on completing a single road through the breakthrough zone. In the first phase of the operation, a pattern was established that was repeated throughout the operation: second-echelon infantry units, up to division in strength, along with uncommitted artillery units, were used for engineer tasks.

During the second and third phases of the offensive, the principal engineer tasks were to clear and restore roads, tedious work considering the degree of destruction caused by German demolitions, the soil composition, and the lack of specialized equipment. According to Major General Absaliyamov, the 31st Rifle Corps commander, this work proceeded at a rate of one kilometer of road per engineer battalion per 24-hour period.²² In this offensive, the aggregate accomplishments of the Soviet engineer units, with

significant infantry support, were considerable. Soviet engineers built 15 kilometers of road suitable for wheeled vehicles, 210 kilometers of tracks and paths, 33 temporary bridges of various lengths with a capacity of up to 16 tons, 20 bridges with a capacity of up to 60 tons, and 2 pontoon bridges and 3 assault bridges; organized 4 assault crossings; constructed 30 fords for armored vehicles; and cleared and restored nearly 500 kilometers of road, removing nearly 16,000 explosive devices totaling more than 50 tons of explosives.²³

Despite these herculean efforts, the engineer forces were not able to sustain the tempo of the offensive. So many other aspects of the operation depended on the engineers. Armored vehicles could not keep pace with the infantry, towed artillery could not displace to new firing positions, and logistic vehicles could not make timely supply deliveries. Even the Soviets' allocation of two or three times the normal ratio of engineer units to maneuver units did not suffice.²⁴ In the Arctic, engineer units must also have special equipment and training for working on rough and difficult terrain.

During the course of the operation, Soviet air forces of the ground forces flew approximately 6,750 sorties.²⁵ Although a general Soviet air superiority of 6 to 1 did not guarantee local air superiority in every circumstance (due to the difference in weather patterns over respective airfields), close air support and air reconnaissance were important to the success of the ground offensive. On some days, when attacking infantry forces were out of range of their supporting artillery, close air support units were the infantry's only fire support.²⁶ On several occasions, the Soviet air forces also air-dropped ammunition and provisions to special-purpose and light infantry units and later provided supplies to the main force by landing at the captured Luostari airfield. Additionally, on return trips, almost 1,000 wounded soldiers were evacuated to Murmansk.²⁷

Bad weather frequently hindered air operations. According to Absaliyev, "meteorological conditions severely limited the utilization of our aviation. This permitted the enemy to conduct an unobstructed retreat and to organize defenses at intermediate positions."²⁸ However, other problems existed as well. As the offensive moved westward, Soviet airfields became more distant from the battle, reducing time over target for close air support units. In addition, atmospheric electromagnetic disturbances interfered with radios and other electrical equipment, affecting navigation and command and control. Finally, the combination of topography and prevailing weather and light conditions greatly complicated visual orientation for flight crews. All these adverse conditions demanded special skills and experience in pilots and crews.

Given the developments since World War II in navigation, fire control, and communications systems, air operations are likely to play an even larger role in arctic operations now than in the past. But the problems of forward airfield construction, visual orientation, and reduced target effects due to soil composition remain. In the end, the side with air superiority will have not only an important combat multiplier but also a greater ability to employ helicopters for moving troops and supplies.

Soviet logistic support to the offensive was, despite Soviet claims to the contrary, poorly executed. Units began to run out of small-arms ammunition on the third day of the offensive and were forced to abandon a hard-won position, a situation that subsequently repeated itself several times. Moving artillery ammunition forward became more vexing with each day's advance, and as well, the problem of supplying ammunition and provisions to the light rifle corps operating away from road axes was never satisfactorily solved.²⁹

The logistic problems resulted from both a shortage of transportation assets and the limited road network. For example, between the two rifle divisions in the 31st Rifle Corps, there were only sixty-two worn-out trucks. Of these, according to the corps commander, 20 to 30 percent were constantly down for repairs.³⁰ The situation at 14th Army was no better. Although there were enough trucks to haul twice the daily required rate of 800 tons, these vehicles were frequently down for repairs. Both the cold weather and the extremely bad roads caused engine failures or axle and suspension problems. One Soviet source calculates that one-third of the truck fleet underwent some type of repair during the operation.³¹

The road network, inadequate to begin with, was shared by both tracked and wheeled vehicles. Logistic and tactical units shared the same road. Each kilometer of westward advance added two kilometers to the round trip of a supply column. The distance from the 14th Army main supply point to forward units grew from 80 to 100 kilometers on 7 October to nearly 200 kilometers by 22 October.

The road problem also affected medical evacuation, since nearly all of 14th Army's casualties were transported to the rear by wheeled vehicles. Accordingly, as a result, 53 percent of the wounded arrived at a medical treatment facility six to twenty-four hours after being wounded, and 17 percent arrived after twenty-four hours.³²

Also hampering logistic operations in this arctic offensive was the sparse civilian population from which to requisition large quantities of food, construction materials, petroleum products, or vehicles. The Soviet experience in the Petsamo-Kirkenes Operation clearly demonstrates that the degree of success or failure of military operations on arctic terrain will, in large part, be determined by the ability of logistic planners and operators to sustain the combat force.

Conclusion

According to General Meretskov's Front order, the mission of the 14th Army in phase one (7–15 October 1944) was to encircle the XIX Mountain Corps. Only Rumiantsev directly addresses why the 14th Army did not accomplish its mission: the 99th Rifle Corps' advance was too slow, mobility problems caused a lack of fire support and logistic support, units fighting in crucial sectors suffered severe ammunition shortages, close air support and reserves were unable to reinforce heavily committed units, and Group Pigarevich was delayed in pursuing the 6th Mountain Division.³³

Two additional significant problems contributed to the failure to encircle and destroy the XIX Mountain Corps. The 29 September Karelian Front operational plan was flawed in that the initial amphibious landing and cross-isthmus attack by naval infantry was delayed until the 14th Army achieved an operational breakthrough. Responsibility for this planning flaw belongs to *STAVKA*, which disapproved Meretskov's original proposal for a simultaneous attack by the 14th Army and Northern Fleet ground and amphibious forces. Also, the light rifle corps failed to block Tarnet Road on 12–15 October, thus allowing the XIX Mountain Corps to withdraw into Norway. The 14th Army operational planners overestimated the combat power of their light rifle units, and the logistic planners underestimated the supply requirements for these same units.

These two flaws in planning, coupled with the performance problems mentioned by Rumiantsev, enabled the German units to avoid total encirclement and to escape into Norway. Even though the 14th Army failed to destroy the XIX Mountain Corps, its accomplishments in the Petsamo-Kirkenes Operation were still significant. Soviet forces inflicted over 9,000 casualties on the Germans, at a cost to themselves of approximately 16,000, a loss rate of approximately 16 percent on both sides. This is not a bad exchange for an attack against a prepared defense.³⁴

In addition to "punishing" the withdrawing Germans, as was Meretskov's personal goal, the Soviet forces liberated Soviet territory and a part of Norwegian territory from German occupation, occupied the strip of Finnish territory that had been used as a bridgehead for the 1941 invasion and that included valuable mineral resources and a useful port, and secured the land flank of the vital sea route to Murmansk. Truly, these strategic gains were significant.

Since 1964, the Soviet military press has published over fifty journal articles, twenty of them since 1984, pertaining to the Petsamo-Kirkenes Operation. Because it was such a unique operation as to the size and type of forces on arctic terrain, it has given the Soviet armed forces valuable experience in arctic warfare. This recent interest is not just history for history's sake. Soviet military historians continue to study and write about the battle in order to gain and pass along important lessons to their forces.

In the past, the U.S. Army has conducted only small-scale operations on arctic terrain. Units that have been designated in their contingency or mobilization plans for deployment to arctic regions have had little historical experience to study to improve their understanding of the peculiar problems of combat and combat support activities in this inhospitable environment. This Leavenworth Paper has made available the information contained in a large body of Russian-language materials, which until now has been nearly inaccessible. It should be used to stimulate wide-ranging discussions of the many problems facing commanders and staff officers of units that may some day fight on similar terrain.
